

CLAIMS

Having thus described the invention, what is claimed is:

1. A medical device, comprising:

a flexible outer tubular member having proximal and distal ends;

a flexible inner member slidably received within the flexible outer tubular member, the flexible inner member comprising a stylet adjacent the proximal end of the outer tubular member, a first spring section having proximal and distal ends and being oriented adjacent the distal end of the outer tubular member, and a second spring section coupled to the stylet and the proximal end of the first spring section; and

a hollow needle member coupled to the distal end of the first spring section,

wherein the device has a retracted position wherein the needle member is retractably housed within the outer tubular member, a first extended position wherein the needle member is at least partially deployed beyond the distal end of the outer tubular member and the second spring section is in an uncompressed state, and a second extended position wherein the second spring section is in a compressed state.

2. The device of claim 1, further comprising:

a hard tip rigidly fixed to the distal end of the outer tubular member, the tip including a bearing surface on the proximal end thereof.

3. The device of claim 2, wherein the needle member includes a limiting member rigidly secured at a point along the length of the needle member and contacting the bearing surface of the tip member in the first and second extended positions.

4. The device of claim 2, further comprising:

a locking member securing the inner member into a contacting relationship with the bearing surface to prevent retractable movement of the needle member when in the second extended position.

5. The device of claim 1, wherein the first spring section comprises a first wavelength and the second spring section comprises a second wavelength greater than the first wavelength in the retracted and first extended positions.

6. The device of claim 5, wherein the second spring section comprises a third wavelength in the second extended position, the third wavelength being less than the second wavelength.

7. The device of claim 1, wherein the inner member comprises a biasing member biasing the inner member into a contacting relationship with a second bearing surface to prevent retractable movement of the needle member when in the retracted position.

8. The device of claim 7, wherein the second bearing surface is adjacent the proximal end of the outer tubular member.

9. The device of claim 1, wherein the second spring section forms an inner volume and the stylet passes therethrough.

10. The device of claim 1, wherein the first spring section forms an inner volume and the stylet extends at least partially into the inner volume thereof in the retracted position.

11. The device of claim 1, wherein the first spring section forms an inner volume and the stylet passes through the inner volume in the second extended position.

12. The device of claim 11, wherein the stylet extends into the needle member in the second extended position.

13. A tissue collection device, comprising:
an elongated outer flexible hollow catheter having proximal and distal ends;
an elongated member slidably positioned within the hollow catheter and defining an axis along its length;
a helically wound wire member having proximal and distal ends and being coaxially attached to the elongated member, wherein the wire member has a proximal region having a first wavelength, and a distal region having a second wavelength normally smaller than the first wavelength; and
a sampling device attached to the distal end of the helically wound wire member.

14. The device of claim 13, wherein the sampling device comprises a hollow needle.

15. The device of claim 14, wherein the device has a first extended position wherein the sampling device extends beyond the distal end of the catheter.

16. The device of claim 15, wherein the device has a second extended position wherein the sampling device extends beyond the distal end of the catheter and the proximal region has a compressed wavelength shorter than the first wavelength.

17. The device of claim 16, further comprising:
a hard tip rigidly fixed to the distal end of the catheter, the tip including a bearing surface on the proximal end thereof.

18. The device of claim 17, wherein the sampling device comprises a limiting member rigidly associated therewith and contacting the bearing surface of the tip member in the second extended position.

19. The device of claim 1, wherein the device has a retracted position wherein the sampling device is housed within the catheter.

20. The device of claim 19, wherein the elongated member comprises a biasing member biasing the elongated member into a contacting relationship with a bearing surface to prevent retractable movement of the sampling device when in the retracted position.

21. The device of claim 20, wherein the bearing surface is adjacent the proximal end of the catheter.

22. The device of claim 1, wherein the proximal region of the wire member forms an inner volume and the elongated member passes therethrough.

23. The device of claim 1, wherein the distal region forms an inner volume and the elongated member extends into the inner volume.

24. The device of claim 1, wherein the device has a first extended position wherein the sampling device extends beyond the distal end of the catheter, and a second extended

position wherein the proximal region has a compressed wavelength shorter than the first wavelength and the distal region forms an inner volume through which the elongated member passes.

25. The device of claim 24, wherein the elongated member extends into the needle in the second extended position.